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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/992,344	11/14/2001	David K. Anderson	FIS9-2001-0151-US1	7187

29154 7590 06/07/2002

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EXAMINER

SEFER, AHMED N

ART UNIT PAPER NUMBER

2826

DATE MAILED: 06/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/992,344

Applicant(s)

ANDERSON ET AL.

Examiner

A. Sefer

Art Unit

2826



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of Group I (claims 1-10) in Paper No. 4 is acknowledged.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Endo et al. (JP 11-31446).

Endo et al disclose in fig. 8 a fuse structure comprising an insulator layer 45 or comprising an interface wall wherein said interface wall further comprises a first side wall, a second side wall, and an inner wall, wherein said inner wall is disposed within a gap (as in claim 7); a plurality of fuse electrodes or fuse electrodes diametrically opposed to one another (as in claim 5) extending through said insulator layer to an underlying wiring layer 46; and a fuse element perpendicularly disposed above said plurality of fuse electrodes (as in claim 6) and connected to said electrodes, wherein said fuse element is positioned external to said insulator, with a gap juxtaposed between said insulator and said fuse element.

4. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Clinton et al. US Patent No. 6,055,150.

Clinton et al disclose (see figs. 1-8, col. 6, lines 11-50 and col. 12, lines 45-67) a fuse structure comprising an insulator layer 30; a plurality of fuse electrodes 25 extending through said insulator layer to an underlying wiring layer; and a fuse element 50 or electroplated fuse element (as in claim 2) or electroless plated fuse element (as in claim 3) having a thickness which falls within 100 angstroms to 350 angstroms (as in claim 4) and connected to said electrodes, wherein said fuse element is positioned external to said insulator, with a gap juxtaposed between said insulator and said fuse element.

5. Claims 1, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishikawa et al. (JP 2000-243200).

Ishikawa et al disclose in figs. 1-3 and 6-9 a fuse structure comprising an insulator layer; a plurality of fuse electrodes 32a, 32b or fuse electrodes diametrically opposed to one another (as in claim 5) extending through said insulator layer to an underlying wiring layer; and a fuse element 30 perpendicularly disposed above said plurality of fuse electrodes (as in claim 6) and connected to said electrodes, wherein said fuse element is positioned external to said insulator, with a gap juxtaposed between said insulator and said fuse element.

6. Claims 8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Endo et al. (JP 11-31446).

Endo et al disclose in fig. 8 a fuse structure comprising an insulator layer or comprising an interface wall, wherein said interface wall further comprises a first side wall, a second side wall, and an inner wall (as in claim 10); a plurality of fuse electrodes

extending through said insulator layer to an underlying wiring layer; and a fuse element connected to said electrodes, wherein said fuse element is positioned external to said insulator, wherein said fuse element is perpendicularly disposed above said plurality of fuse electrodes, wherein said fuse electrodes are diametrically opposed to one another.

7. Claims 8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishikawa et al. (JP 2000-243200).

Ishikawa et al disclose in figs. 1-3 and 6-9 a fuse structure comprising an insulator layer or comprising an interface wall, wherein said interface wall further comprises a first side wall, a second side wall, and an inner wall (as in claim 10); a plurality of fuse electrodes 32a, 32b extending through said insulator layer to an underlying wiring layer; and a fuse element connected to said electrodes, wherein said fuse element is positioned external to said insulator, wherein said fuse element is perpendicularly disposed above said plurality of fuse electrodes, wherein said fuse electrodes are diametrically opposed to one another.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al. in view of Clinton et al.

Endo et al disclose all the claimed subject matter, but do not specifically disclose an electroplated and electroless fuse element.

Clinton et al disclose an electroplated and electroless fuse element. Therefore, it would have been to one skilled in the art at the time the invention was made to use an electroplated and electroless fuse element, since that would provide the required resistivity and melting point necessary for a better fuse function.


### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kiyokawa US ref. 5,863,407 discloses an electroplated and electroless plated fuse.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (703) 605-1227.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on (703) 308-6601.

ANS  
June 4, 2002

  
NATHAN J. FLYNN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800